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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/594,754	02/28/2007	Hisashi Inaba	1034290-000007	3796
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EXAMINER HUANG, WEI WU				
ART UNIT 2618		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

ADIPFDD@bipc.com

Office Action Summary

Application No.

10/594,754

Applicant(s)

INABA ET AL.

Examiner

WEN W. HUANG

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SG/US)
- Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claims 13-32 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 13, 15, 17 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykema et al. (US. 6,091,343; hereinafter "Dykema") in view of Rohrl et al. (US. 6,353,776 B1; hereinafter "Rohrl")

Regarding **claim 13**, Dykema teaches an on-vehicle radio device (see Dykema, fig. 1) that acquires information for unlocking a lock device of a vehicle from a portable radio device by radio communication with said portable radio device (see Dykema, col. 2, lines 7-11), comprising:

human detection means of detecting a person (see Dykema, fig. 5, user interface 120);

variable frequency signal generating means of generating a variable frequency signal for said radio communication (see Dykema, fig. 5, signal generating circuit 200 and fig. 6, voltage controlled oscillator VCO 202);

band changing means of changing the frequency band of a signal generated by said variable frequency signal generating means (see Dykema, fig. 5, frequency synthesis and control circuit 160 and 165, col. 6, lines 60-65) in accordance with a detection signal of said human detection means (see Dykema, fig. 7a, step 305, col. 11, lines 25-35);

radio transmitting means of transmitting the signal generated by said variable frequency signal generating means to the outer space (see Dykema, fig. 5, transmit antennas 240 and 250); and

transmission characteristics changing means of changing the transmission characteristics of said radio transmitting means to transmission characteristics adapted to the frequency band of the signal generated by said variable frequency signal generating means changed by said band changing means (see Dykema, fig. 5, antenna select switch 230; col. 15, lines 30-40).

Dykema is silent to teaching that the on-vehicle radio device acquires identification information from a portable radio device having said identification information recorded therein. However, the claimed limitation is well known in the art as evidenced by Rohrl.

In the same field of endeavor, Rohrl teaches an on-vehicle radio device (see Rohrl, fig. 2, motor vehicle 9 and base station 14) acquires identification information from a portable radio device having said identification information recorded therein (see Rohrl, fig. 1, transponder 1, arithmetic unit 4; col. 7, lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema with the teaching of Rohrl in order to provide protection to unauthorized entry and usage of the vehicles (see Rohrl, col. 1, lines 58-67).

Regarding **claim 15**, the combination of Dykema and Rohrl teaches the on-vehicle radio device according to claim 13, wherein said band changing means is activated when said human detection means detects a person (see Dykema, fig. 1 and 2, push buttons 44, 46 and 47; col. 5, lines 40-42 and 50-55).

Regarding **claim 17**, the combination of Dykema and Rohrl teaches the on-vehicle radio device according to claim 13, wherein the frequency band of a signal transmitted from said portable radio device to said on-vehicle radio device is set higher than the frequency of the signal transmitted from said on-vehicle radio device to said portable radio device (see Rohrl, col. 11, lines 45-55).

Regarding **claim 25**, the dependent claim is interpreted and rejected for the same reason as set forth above in claim 17.

2. Claims 18-20 and 26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykema and Rohrl as applied to claim 13 and 15 above, and further in view of Grandfield et al. (US. 4,791,377; hereinafter "Grandfield").

Regarding **claim 18**, the combination of Dykema and Rohrl teaches the on-vehicle radio device according to claim 13, wherein said variable frequency signal generating means generates the signal to be transmitted to said portable radio device (see Dykema, fig. 5, modulation circuit 220, transmit antennas 240 and 250).

The combination of Dykema and Rohrl is silent to teaching that wherein said variable frequency signal generating means generates the signal based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates the signal based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Rohrl with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 19**, the combination of Dykema and Rohrl teaches the on-vehicle radio device according to claim 13, wherein said variable frequency signal generating means modulates a predetermined code with the carrier wave, thereby

generating the signal to be transmitted to said portable radio device (see Dykema, fig. 5, modulation circuit 220, transmit antennas 240 and 250).

The combination of Dykema and Rohrl is silent to teaching that wherein said variable frequency signal generating means generates a carrier wave based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates a carrier wave based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Rohrl with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 20**, the combination of Dykema and Rohrl teaches the on-vehicle radio device according to claim 13.

The combination of Dykema and Rohrl is silent to teaching that wherein said band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band

of the signal generated by said variable frequency signal generating means. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device (see Grandfield, fig. 3, variable band pass filter 37) based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means (see Grandfield, col. 4, lines 38-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Rohrl with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claims 26-28**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 18-20, respectively.

3. Claims 14, 16, 21 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykema in view of Rohrl and King et al. (US Pub No. 2004/0037365 A1; hereinafter "King")

Regarding **claim 14**, Dykema teaches an on-vehicle radio device (see Dykema, fig. 1) that acquires information for unlocking a lock device of a vehicle from a portable

radio device by radio communication with said portable radio device (see Dykema, col. 2, lines 7-11), comprising:

radio wave measuring means of measuring radio wave intensity in the outer space of said on-vehicle radio device for each of predetermined frequency bands (see Dykema, fig. 5, receiving antenna 130);

variable frequency signal generating means of generating a variable frequency signal for said radio communication (see Dykema, fig. 5, signal generating circuit 200 and fig. 6, voltage controlled oscillator VCO 202);

band changing means of changing the frequency band of a signal generated by said variable frequency signal generating means to one of the frequency bands (see Dykema, fig. 5, frequency synthesis and control circuit 160 and 165, col. 6, lines 60-65);

radio transmitting means of transmitting the signal generated by said variable frequency signal generating means to the outer space (see Dykema, fig. 5, transmit antennas 240 and 250); and

transmission characteristics changing means of changing the transmission characteristics of said radio transmitting means to transmission characteristics adapted to the frequency band of the signal generated by said variable frequency signal generating means changed by said band changing means (see Dykema, fig. 5, antenna select switch 230; col. 15, lines 30-40).

Dykema is silent to teaching that wherein:

the on-vehicle radio device acquires identification information from a portable radio device having said identification information recorded therein, and

said band changing means of changing the frequency band to one of the frequency bands for which said radio wave measuring means measures the lowest radio wave intensity. However, the claimed limitation is well known in the art as evidenced by Rohrl and King.

In the same field of endeavor, Rohrl teaches an on-vehicle radio device (see Rohrl, fig. 2, motor vehicle 9 and base station 14) acquires identification information from a portable radio device having said identification information recorded therein (see Rohrl, fig. 1, transponder 1, arithmetic unit 4; col. 7, lines 30-33).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema with the teaching of Rohrl in order to provide protection to unauthorized entry and usage of the vehicles (see Rohrl, col. 1, lines 58-67).

The combination of Dykema and Rohrl is silent to teaching that said band changing means of changing the frequency band to one of the frequency bands for which said radio wave measuring means measures the lowest radio wave intensity. However, the claimed limitation is well known in the art as evidenced by King.

In the same field of endeavor, King teaches an on-vehicle radio device (see King, para. [0004]) wherein said band changing means of changing the frequency band to one of the frequency bands for which said radio wave measuring means measures the lowest radio wave intensity (see King, para. [0006] and fig. 4, step 100, para. [0025]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema and Rohrl with the

teaching of King in order to avoid interference and degradation of communication quality (see King, para. [0004]).

Regarding **claim 16**, the combination of Dykema, Rohrl and King teaches the on-vehicle radio device according to claim 14, wherein said radio measuring means measures radio wave intensity when said on-vehicle radio device is in a transmission wait state (see King, fig. 4, steps 96-98; para. [0025]).

Regarding **claim 21**, the combination of Dykema, Rohrl and King teaches the on-vehicle radio device according to claim 14, wherein the frequency band of a signal transmitted from said portable radio device to said on-vehicle radio device is set higher than the frequency of the signal transmitted from said on-vehicle radio device to said portable radio device (see Rohrl, col. 11, lines 45-55).

Regarding **claim 29**, the dependent claim is interpreted and rejected for the same reason as set forth above in claim 21.

4. Claims 22-24 and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dykema, Rohrl and King as applied to claim 14 and 16 above, and further in view of Grandfield.

Regarding **claim 22**, the combination of Dykema, Rohrl and King teaches the on-vehicle radio device according to claim 14, wherein said variable frequency signal generating means generates the signal to be transmitted to said portable radio device (see Dykema, fig. 5, modulation circuit 220, transmit antennas 240 and 250).

The combination of Dykema, Rohrl and King is silent to teaching that wherein said variable frequency signal generating means generates the signal based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates the signal based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema, Rohrl and King with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 23**, the combination of Dykema, Rohrl and King teaches the on-vehicle radio device according to claim 14, wherein said variable frequency signal generating means modulates a predetermined code with the carrier wave, thereby generating the signal to be transmitted to said portable radio device (see Dykema, fig. 5, modulation circuit 220, transmit antennas 240 and 250).

The combination of Dykema, Rohrl and King is silent to teaching that wherein said variable frequency signal generating means generates a carrier wave based on discrete variable values of a sine function stored in a table. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a variable frequency signal generating means (see Grandfield, fig. 2, numerical controlled oscillator 21) generates a carrier wave based on discrete variable values of a sine function stored in a table (see Grandfield, col. 3, lines 60-68).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema, Rohrl and King with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claim 24**, the combination of Dykema, Rohrl and King teaches the on-vehicle radio device according to claim 14.

The combination of Dykema, Rohrl and King is silent to teaching that wherein said band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means. However, the claimed limitation is well known in the art as evidenced by Grandfield.

In the related art, Grandfield teaches a band changing means has a digital filter that removes a frequency band that is not necessary for transmission to said portable radio device (see Grandfield, fig. 3, variable band pass filter 37) based on a predetermined coefficient and changes said coefficient in accordance with the changed frequency band of the signal generated by said variable frequency signal generating means (see Grandfield, col. 4, lines 38-48).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teaching of Dykema, Rohrl and King with the teaching of Grandfield in order to allow fast frequency selection (see Grandfield, col. 1, lines 25-28).

Regarding **claims 30-32**, the dependent claims are interpreted and rejected for the same reasons as set forth above in claims 22-24, respectively.

Response to Arguments

Applicant's arguments with respect to claims 13 and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to WEN W. HUANG whose telephone number is (571)272-7852. The examiner can normally be reached on 10am - 6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on (571) 272-4177. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/W. W. H./
Examiner, Art Unit 2618

/Matthew D. Anderson/
Supervisory Patent Examiner, Art Unit 2618